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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,761	07/13/2001	Gaylon S. Campbell	8050	3577

7590 08/14/2002

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EXAMINER

JACKSON, ANDRE K

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 08/14/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)
	09/905,761	CAMPBELL ET AL.
	Examiner Andre' K. Jackson	Art Unit 2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-8 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.	6) <input type="checkbox"/> Other: ____.

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Semiconductor circuit for claims 4,5,7 and 8.

Claim Objections

2. Claims 1 and 4-8 are objected to because of the following informalities:

Regarding claim 1, --and-- should be inserted after ";" on page 9, line 3.

Regarding claim 4, --and-- should be inserted after ";" on page 10, line 6.

Regarding claim 5, --and-- should be inserted after ";" on page 10, line 12.

Regarding claim 6, --and-- should be inserted after ";" on page 11, line 6.

Regarding claim 7, --and-- should be inserted after ";" on page 11, line 17.

Regarding claim 8, --and-- should be inserted after ";" on page 12, line 12.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 4,5,7 and 8 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 4,5,7 and 8, a semiconductor circuit is not recited in the specification. It is unclear to the Examiner as to what this exactly the composition of this semiconductor circuit. Is the circuit a special composition or an ordinary circuit?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuer in view of Mackay et al.

Regarding claim 1, Feuer discloses a “Soil moisture sensor” which has first and second elongate members (12 and 13) and sensor electronics (14) being protected by a housing (22) that is responsive to a direct current. Feuer’s invention relates to measuring moisture of fine or powdery media. However, Mackay et al. discloses a “Measurement of soil moisture” which measures moisture in bulk materials. Therefore, it would have been obvious to the skilled artisan to modify Feuer to include measuring moisture in bulk materials as taught by Mackay et al. since measuring in bulk gives a better reading of the moisture in the material.

Regarding claim 2, Feuer discloses an oscillator (30), responsive to direct current, a transmission line (80) coupled to receive the square wave voltage signal from the oscillator through a resistor. Feuer does not disclose a phase detector. However, Mackay et al. discloses a phase detector (Column 2, line 48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Feuer to include a phase detector as taught by Mackay et al. since to provide the average moisture content of the volume of soil.

Regarding claim 3, Feuer discloses where the sensor electronics is proportional to the water content of the fine or powdery media. Feuer does not disclose the measuring of bulk material. However, Mackay et al. discloses measuring the moisture of bulk materials. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Feuer to include measuring the water content of bulk material as taught by Mackay since they are from the same field of endeavor.

Regarding claim 6, Feuer discloses an oscillator (30) to provide a square wave voltage signal and a transmission line (80). Feuer does not disclose a phase detector. However, Mackay et al. discloses a phase detector (Column 2, line 48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Feuer to include a phase detector as taught by Mackay et al.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feuer in view of Mackay et al. as applied to claim 1-3 above, and further in view of Hook.

Regarding claim 4, Feuer discloses a semiconductor circuit having first and second inputs and an output (Figure 1). Feuer does not disclose a circuit being indicative of the phase difference. However, Mackay et al. does disclose a phase detector. Neither Feuer nor Mackay et al. discloses "Timing markers in the time domain reflectometry systems"

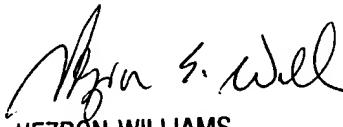
which has a low pass filter (195). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Feuer to include a low pass filter as taught by Mackay et al. to improve the signal to noise ratio.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Fri. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are N/A for regular communications and N/A for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J. 
August 9, 2002


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
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